also the oil we have used, because there is no big store of oil anywhere. We use it as we produce it. And a really interesting curve.

Notice the shape of this curve here. If nothing happened to change that curve, it would have gone off the top of the graph by this time. Well, something did happen to change the shape of that curve. You notice that changed in the seventies, and these were the oil price spike hikes engendered by the Arab oil embargo, and it caused a worldwide recession. Here is the worldwide recession, and, boy, we woke up, we and much of the rest of the world, and we found ways to do things more efficiently. Now we are recovering from that and the economy is great for most of the world, there is a little tremor now, but it has been a great economy. But you notice the slope of this curve after that is very much less than the slope of this curve.

There is an interesting statistic during the Carter years, up to the Carter years, as a matter of fact, that every decade we use as much oil as had been used in all of the world in all of previous history. Wow. What that means is, of course, when you have used half the oil, you have only one decade left. Well, we have really slowed down now. You can see the slope of this curve is very much less.

Now, when will the world reach its maximum oil production? See, what we have been doing since about 1980, we have found less and less oil, but we have used more and more oil, so this area here, the area above the oil that we found has been filled in by the oil that we found way back.

Now, we have got a lot these reserves left, and the makers of this chart say that this is the average of what we will find in the future. It won't be smooth, it will be up and down, but that is probably about the quantity that we will find. But we are using more. And they are suggesting that we will be peaking about now, as you can see, and that this area here will have to be filled in by reserves that we found back here, because we aren't finding any meaningful amount of oil now. So those who made this chart believe that oil in the world should be peaking about now.

The next chart shows the estimates of a number of authorities. Some of them have enormous uncertainty in when they think peak oil might occur. Here is one that says it could occur anytime between now and 2120, between 2020 and 2120. Here is one that says, gee, it could be anytime. But a great number of them believe it could be as early as about now. Here we are at about this point. A great many of them believe it could be now or shortly after this. So there is general consensus through most of the authorities in the world that peaking could be now.

The next chart kind of puts all of this in perspective, and this is an interesting chart. Let's just refer to the upper part of it. The lower part of it is a blowup of the upper part separating out gas from oil.

Hyman Rickover, who gave a great speech the 14th day of May, 1957, so this will be the 51st anniversary of his speech, noted that we were in an age of oil. I will have some quotes from his speech in a few moments. That we were in an age of oil. And he said in 8,000 years of recorded history we were, when he gave his speech, about 100 years into the age of oil.

This is a chart that looks not back through 8,000 years. But if we went back that far, the amount of energy used by mankind would be down here so near zero you could hardly see the difference. We go here about 400 years and the industrial revolution began with wood. And then we found coal, and, boy, it jumped up. And then we found gas and oil, and, wow, the quality of the energy, the extractability, how easy it was to get, how easy it was to use. And look what happened to energy use. It just spiked. Here we see that same discontinuity in the seventies, the worldwide recession, the oil price spike hikes.

Now, let's look at the next curve here, because this shows exactly the same curve. What we have done here is to expand the abscissa, that is this bottom, and compressed the ordinate, so now it is a low, smooth curve. If you pull this in and push that up, you can make the sharp curve that we saw over there. We had only gone this far over there. Now we really dip down the other side.

But I want to focus here on the yellow area of this chart. If we in fact are peaking in oil production, and if the world follows the pattern that we have been following in the United States, then the production of oil will look, it has looked up until now about like this, and in the future it will slide down the other side of Hubbert's Peak.

Today in the United States we produce half the oil that we produced in 1970, in spite of finding a lot of oil in Alaska and a fair amount of oil in the Gulf of Mexico, and in spite of drilling more oil wells than all of the rest of the world put together. So we are about at this point, I believe, and the demand is about 2 percent.

Now, 2 percent doesn't seem like much, does it? As a matter of fact, our stock market doesn't like 2 percent growth. It thinks that is anemic and it is likely not to do well. But 2 percent growth doubles in 35 years, and here we are talking about long time periods. It doubles in 35 years, it is four times bigger in 70 years, it is eight times bigger in 105 years, and it is 16 times bigger in 140 years.

This phenomenon of exponential growth caused Albert Einstein to respond to a question, gee, Dr. Einstein, what will be the next big energy force in the world? And he said the most powerful force in the world is the power of compound interest. The next, of course, after nuclear energy.

So, with this 2 percent growth, and I would submit that it is going to be hard to hold growth to 2 percent, because we have India and China coming on board. I was in Beijing about a year or so ago and they had banned bicycles in parts of Beijing because they were getting in the way of cars. With the demand of oil in India and China, I think it will be hard to hold it to 2 percent growth. But this is 2 percent growth, and it doubles in 35 years. So this period is 35 years.

Many people looking at the problem we face with peak oil say, gee, let's fill the peak. I think it is manifestly impossible to fill the peak, and I don't think we need to fill the peak. I would be happy if we were reasonably sure that we could just fill the area below this peak so we would have a plateau out here. I am not sure that the world will be able to do that. Neither am I sure that we have to do that to live well, actually.

The next quote is a quote from this really great speech given by Hyman Rickover. If M. King Hubbert's speech was the most important speech of the last century, and I think that it may have been, then I think maybe the most insightful speech of the last century was that speech given 51 years ago the 14th day of this May.

I came to this floor on the 50th anniversary of that, and Hyman Rickover's widow sat in the gallery there when I read largely from the really, really insightful prophetic speech that he gave.

These are some of the quotes. ''I suggest that this is a good time to think soberly about our responsibilities to our descendants.'' I do a lot of that. I have 10 kids, I have 16 grandkids, and I have two great grandkids, so I think a lot about my descendants. ''Those who will ring out the fossil fuel age.''

Wow. I was thinking of this statement when I led a CODEL to China the last holiday, not this Christmas and New Year's, but the one before that, and we went there to talk about, the nine of us, went to talk to the Chinese about energy. And it was really interesting.

They began their discussion of energy by talking about post-oil. Wow. As Hyman Rickover said, there will be a post-oil, because if there is a fossil fuel age, the age of oil, then there will be some time after the age of oil. We in this country think in terms of the next quarterly report and how am I going to get myself elected the next time, and it is really interesting that people in that part of the world tend to think more in terms of generations and centuries. But the Chinese recognize that there will be an age of oil.

''Those who will ring out the fossil fuel age, we might give a break to these youngsters by cutting fuel and metal consumption so as to provide a safer margin for the necessary adjustments which eventually must be made in a world without fossil fuels. There will one day be a world without fossil fuels.''

I think that has to be obvious. If you look at the world, the whole thing is